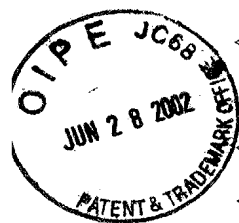SEQUENCE LISTING

<110> ROULEAU, Guy A.
      JOOBER, Ridha
      BENKELFAT, Chawki

<120> POLYMORPHIC CAG REPEAT-CONTAINING GENE AND USES THEREOF

<130> 2055GG/48747TR

<140> 09/508,821
<141> 2000-05-26

<150> PCT/CA98/00884
<151> 1998-09-18

<150> 2,216,057   CA
<151> 1997-09-19

<160> 23

<170> PatentIn Ver. 2.1

<210> 1
<211> 328
<212> DNA
<213> Mus musculus

<400> 1
agggcagcca ctttccccag cattcccagt ccttccctac ctcctccact tatgccccaa 60
cagtgcaggg tggtgggcag ggggcccact cctacaagag ctgcacagca ccatctgccc 120
agcctcatga taggccgatg agtgccaatg cgaacctggc tccagggcaa cgggtccaga 180
atcttcacgc ttaccagcct ggccgccttg gctacgagca gcagcagcaa gcacttcaag 240
gccgtcacca cacccaggaa acactccact accagaacct cgccaagtac caacactatg 300
gacagcaagg ccagggctac tgtccacc 328

<210> 2
<211> 330
<212> DNA
<213> Homo sapiens

<220>
<221> modified_base
<222> (59)
<223> N = A or G or C or T/U

<400> 2
tccttcccca cctcctccac ctactcctcc tctgtcccag ggtggtgggc agggggccna 60
ctcctataag agttgcacag caccgactgc ccagccccat gacaggccgc tgactgccag 120
ctccagcctg gccccggggc agcgggtcca gaatcttcat gcctaccagt cgggccgcct 180
cagctatgac cagcagcagc agcagcagca gcagcagcag cagcagcagc aagcccttca 240
gagccggcac catgcccagg aaaccctcca ttaccaaaac ctcgccaagt atcagcacta 300
cgggcagcaa ggccagggct actgccagcc 330

<210> 3
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:
      oligonucleotide

<400> 3

ggggcagcgg ·gtccagaatc ttc

<210> 4
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:
      oligonucleotide

<400> 4
agcactacgg gcagcaaggc cag   23

<210> 5
<211> 6022
<212> DNA
<213> Homo sapiens

<220>
<221> CDS
<222> (490)..(6021)

<400> 5
ggatccagca ggcccaaggg gatgagggag cggaaattgc tctgctaaat gcttttgagc 60

tgtcaggaag ggctgggagt gatgggtggg ggacattggg gaggagctgg caatgggcgg 120

gggggggggcg ggtagctccc cagtgacctg gcgctgggca gccggttttg cctcccgcat 180

cagtggccgt ccttggcaag actcagctgc aggcgatgtg ggagcgggaa ttacagagca 240

cacctccctg acacagaagt tgtcaatatg cgcacagctg gtggggaggc tcaggcgaag 300

gggggactat taagagctgc gcgggggagc aggcagggtg gggaggtggg tgggagggtg 360

cttctgagg caaaaggaag tggcccgtct gaatcgctca tcctctgccc cctccctgcc 420

catcctcccc tccctccttc cctccctccc tcccttcctt tttcttttca cagataacca 480

gcccgagtc atg cag tct ttt cga gaa agg tgt ggt ttc cat ggc aaa caa 531
          Met Gln Ser Phe Arg Glu Arg Cys Gly Phe His Gly Lys Gln
           1   5   10

cag aac tac cag cag acc tcg cag gaa aca tca cgc cta gag aat tac 579
Gln Asn Tyr Gln Gln Thr Ser Gln Glu Thr Ser Arg Leu Glu Asn Tyr
 15   20   25   30

agg cag ccg agt cag gcc ggg cta agc tgc gac cgg cag cgg ctg ctc 627
Arg Gln Pro Ser Gln Ala Gly Leu Ser Cys Asp Arg Gln Arg Leu Leu
                35   40   45

gcc aag gac tat tat aac ccg cag cct tac ccg agc tat gag ggt ggc 675
Ala Lys Asp Tyr Tyr Asn Pro Gln Pro Tyr Pro Ser Tyr Glu Gly Gly
                50   55   60

gct ggc acg ccc tct ggc act gca gcc gcg gtg gcc gcc gac aag tac 723
Ala Gly Thr Pro Ser Gly Thr Ala Ala Ala Val Ala Ala Asp Lys Tyr
                65   70   75

cac cga ggc agc aag gcc ctg ccc aca cag caa ggc ctg cag ggg agg 771
His Arg Gly Ser Lys Ala Leu Pro Thr Gln Gln Gly Leu Gln Gly Arg
                80   85   90

```
ccg gct ttc cct ggc tac ggc gtc cag gac agc agc ccc tac cca ggc    819
Pro Ala Phe Pro Gly Tyr Gly Val Gln Asp Ser Ser Pro Tyr Pro Gly
 95              100             105                     110

cgc tat gct ggt gag gag agc ctt cag gct tgg ggg gcc cca cag cca    867
Arg Tyr Ala Gly Glu Glu Ser Leu Gln Ala Trp Gly Ala Pro Gln Pro
                115             120                 125

cca ccc cca cag ccg cag cca cta cct gca ggg gtg gcc aag tat gat    915
Pro Pro Pro Gln Pro Gln Pro Leu Pro Ala Gly Val Ala Lys Tyr Asp
            130             135                 140

gag aac ttg atg aaa aag aca gca gtg ccc ccc agc agg cag tat gca
Glu Asn Leu Met Lys Lys Thr Ala Val Pro Pro Ser Arg Gln Tyr Ala    963
            145             150                 155

gag cag ggc gcc cag gtg ccc ttt cgg act cac tcc ctg cac gtc cag
1011
Glu Gln Gly Ala Gln Val Pro Phe Arg Thr His Ser Leu His Val Gln
        160             165             170

cag cca ccg ccg ccc cag cag ccc ctg gca tac ccc aag ctc caa agg
1059
Gln Pro Pro Pro Pro Gln Gln Pro Leu Ala Tyr Pro Lys Leu Gln Arg
175             180             185                 190

cag aag ctg cag aac gac att gcc tcc cct ctg ccc ttc ccc cag ggt
1107
Gln Lys Leu Gln Asn Asp Ile Ala Ser Pro Leu Pro Phe Pro Gln Gly
                195             200             205

acc cac ttt cct cag cat tcc cag tcc ttc ccc acc tcc tcc acc tac
1155
Thr His Phe Pro Gln His Ser Gln Ser Phe Pro Thr Ser Ser Thr Tyr
            210             215             220

tcc tcc tct gtc cag ggt ggt ggg cag ggg gcc cac tcc tat aag agt
1203
Ser Ser Ser Val Gln Gly Gly Gly Gln Gly Ala His Ser Tyr Lys Ser
            225             230             235

tgc aca gca ccg act gcc cag ccc cat gac agg ccg ctg act gcc agc
1251
Cys Thr Ala Pro Thr Ala Gln Pro His Asp Arg Pro Leu Thr Ala Ser
        240             245             250

tcc agc ctg gcc ccg ggg cag cgg gtc cag aat ctt cat gcc tac cag
1299
Ser Ser Leu Ala Pro Gly Gln Arg Val Gln Asn Leu His Ala Tyr Gln
255             260             265                 270

tcg ggc cgc ctc agc tat gac cag cag cag cag cag cag cag cag cag
1347
Ser Gly Arg Leu Ser Tyr Asp Gln Gln Gln Gln Gln Gln Gln Gln Gln
            275             280                 285

cag cag cag cag caa gcc ctt cag agc cgg cac cat gcc cag gaa acc
1395
Gln Gln Gln Gln Gln Ala Leu Gln Ser Arg His His Ala Gln Glu Thr
            290             295                 300

ctc cat tac caa aac ctc gcc aag tat cag cac tac ggg cag caa ggc
1443
Leu His Tyr Gln Asn Leu Ala Lys Tyr Gln His Tyr Gly Gln Gln Gly
            305             310             315
```

cag ggc tac tgc cag ccg gac gca gcc gtc cgg acc cca gag cag tac
1491
Gln Gly Tyr Cys Gln Pro Asp Ala Ala Val Arg Thr Pro Glu Gln Tyr
    320   325   330

tac cag acc ttc agc ccc agc tcc agc cac tca ccc gcc cgc tcc gtg
1539
Tyr Gln Thr Phe Ser Pro Ser Ser Ser His Ser Pro Ala Arg Ser Val
335   340   345   350

ggc cgc tca cct tcc tac agt tcc aca ccg tcg ccg ctg atg cca aac
1587
Gly Arg Ser Pro Ser Tyr Ser Ser Thr Pro Ser Pro Leu Met Pro Asn
            355   360   365

ctg gag aac ttt ccc tac agc cag cag ccg ctc agc acc ggg gcc ttc
1635
Leu Glu Asn Phe Pro Tyr Ser Gln Gln Pro Leu Ser Thr Gly Ala Phe
            370   375   380

ccc gca ggg atc act gac cac agc cac ttc atg ccc ctg ctc aat ccc
1683
Pro Ala Gly Ile Thr Asp His Ser His Phe Met Pro Leu Leu Asn Pro
        385   390   395

tcc cca acg gat gcc acc agc tct gtg gac acc cag gct ggc aac tgc
1731
Ser Pro Thr Asp Ala Thr Ser Ser Val Asp Thr Gln Ala Gly Asn Cys
    400   405   410

aag ccc ctt cag aag gac aag ctc cct gag aac ctg ctg tcg gat ctc
1779
Lys Pro Leu Gln Lys Asp Lys Leu Pro Glu Asn Leu Leu Ser Asp Leu
415   420   425   430

agc ctg cag agc ctc acg gcg ctg acc tta cag gtg gag aac atc tcc
1827
Ser Leu Gln Ser Leu Thr Ala Leu Thr Leu Gln Val Glu Asn Ile Ser
            435   440   445

aac acc gtc cag cag ctg ctg ctc tcc aag gct gct gtg ccg cag aag
1875
Asn Thr Val Gln Gln Leu Leu Leu Ser Lys Ala Ala Val Pro Gln Lys
            450   455   460

aaa ggt gtc aag aac ctc gtg tcc agg acc cca gag cag cat aaa agc
1923
Lys Gly Val Lys Asn Leu Val Ser Arg Thr Pro Glu Gln His Lys Ser
        465   470   475

cag cac tgc agc ccc gaa ggg agc ggc tac tca gcc gag ccc gca ggc
1971
Gln His Cys Ser Pro Glu Gly Ser Gly Tyr Ser Ala Glu Pro Ala Gly
    480   485   490

aca ccg ctg tca gag ccg ccg agc agc acg cca cag tcc acg cat gcg
2019
Thr Pro Leu Ser Glu Pro Pro Ser Ser Thr Pro Gln Ser Thr His Ala
495   500   505   510

gag ccg cag gag gcc gac tac ctg agc ggc tcc gag gac cca ctg gag
2067
Glu Pro Gln Glu Ala Asp Tyr Leu Ser Gly Ser Glu Asp Pro Leu Glu
            515   520   525

cgc agc ttc ctc tac tgc aac cag gcc cgt ggc agc cct gcc agg gtc

2115
Arg Ser Phe Leu Tyr Cys Asn Gln Ala Arg Gly Ser Pro Ala Arg Val
          530   535   540

aac agc aac tcg aag gcc aag ccc gag tcc gtg tcc acc tgt tct gtg
2163
Asn Ser Asn Ser Lys Ala Lys Pro Glu Ser Val Ser Thr Cys Ser Val
          545   550   555

acc tct cct gac gac atg tcc acc aaa tct gac gac tcc ttc cag agc
2211
Thr Ser Pro Asp Asp Met Ser Thr Lys Ser Asp Asp Ser Phe Gln Ser
      560   565   570

cta cac ggc agt ctg ccg ctc gac agc ttc tcc aag ttc gtg gcg ggt
2259
Leu His Gly Ser Leu Pro Leu Asp Ser Phe Ser Lys Phe Val Ala Gly
575   580   585   590

gag cgg gac tgt ccg cgg ctg ctg ctc agc gcc ctg gca cag gag gac
2307
Glu Arg Asp Cys Pro Arg Leu Leu Leu Ser Ala Leu Ala Gln Glu Asp
              595   600   605

ctg gcc tcc gag atc ctg ggg ctg cag gaa gcc atc ggt gag aag gcc
2355
Leu Ala Ser Glu Ile Leu Gly Leu Gln Glu Ala Ile Gly Glu Lys Ala
          610   615   620

gac aaa gct tgg gct gaa gca ccc agc ctg gtc aag gac agc agc aag
2403
Asp Lys Ala Trp Ala Glu Ala Pro Ser Leu Val Lys Asp Ser Ser Lys
          625   630   635

cca ccc ttc tcg ctg gag aac cac agc gcc tgc ctg gac tct gtg gcc
2451
Pro Pro Phe Ser Leu Glu Asn His Ser Ala Cys Leu Asp Ser Val Ala
          640   645   650

aag agt gcg tgg ccc cgg cct ggg gag ccg gag gcc ctg ccc gac tcc
2499
Lys Ser Ala Trp Pro Arg Pro Gly Glu Pro Glu Ala Leu Pro Asp Ser
655   660   665   670

ttg cag ctg gac aag ggc ggc aat gcc aag gac ttc agc cca ggg ctg
2547
Leu Gln Leu Asp Lys Gly Gly Asn Ala Lys Asp Phe Ser Pro Gly Leu
              675   680   685

ttt gaa gac cct tcc gtg gcc ttc gct acg cct gac ccc aaa aag aca
2595
Phe Glu Asp Pro Ser Val Ala Phe Ala Thr Pro Asp Pro Lys Lys Thr
              690   695   700

act ggt cct ctc tcc ttt ggt acc aag ccc acc ctt ggg gtt cct gct
2643
Thr Gly Pro Leu Ser Phe Gly Thr Lys Pro Thr Leu Gly Val Pro Ala
          705   710   715

cca gac ccc act aca gca gct ttt gac tgt ttc ccg gac aca acc gct
2691
Pro Asp Pro Thr Thr Ala Ala Phe Asp Cys Phe Pro Asp Thr Thr Ala
      720   725   730

gcc agc tca gcg gac agc gcc aac ccc ttt gcc tgg cca gag gaa aac
2739

Ala Ser Ser Ala Asp Ser Ala Asn Pro Phe Ala Trp Pro Glu Glu Asn
735   740   745   750

ctg ggg gat gct tgt ccc agg tgg gga ttg cac cct ggc gag ctt acc
2787
Leu Gly Asp Ala Cys Pro Arg Trp Gly Leu His Pro Gly Glu Leu Thr
                755   760   765

aag ggc ctg gag cag ggt ggg aag gcc tca gat ggc atc agc aaa ggg
2835
Lys Gly Leu Glu Gln Gly Gly Lys Ala Ser Asp Gly Ile Ser Lys Gly
                770   775   780

gac acc cat gag gct tcg gcc tgc ctg ggc ttc cag gag gag gac ccc
2883
Asp Thr His Glu Ala Ser Ala Cys Leu Gly Phe Gln Glu Glu Asp Pro
        785   790   795

cct ggg gag aag gtg gcc tcg ttg ccc ggg gac ttc aag cag gag gag
2931
Pro Gly Glu Lys Val Ala Ser Leu Pro Gly Asp Phe Lys Gln Glu Glu
    800   805   810

gtg ggt ggg gtg aag gag gag gca ggt ggg ctg ctg cag tgc ccc gag
2979
Val Gly Gly Val Lys Glu Glu Ala Gly Gly Leu Leu Gln Cys Pro Glu
815   820   825   830

gtg gcc aag gct gac cgg tgg ctg gag gac agc cgg cac tgc tgt tcc
3027
Val Ala Lys Ala Asp Arg Trp Leu Glu Asp Ser Arg His Cys Cys Ser
                835   840   845

acc gcc gac ttc ggg gac ctc cca ctg ctg cca ccc acc agc agg aag
3075
Thr Ala Asp Phe Gly Asp Leu Pro Leu Leu Pro Pro Thr Ser Arg Lys
                850   855   860

gag gac ctg gaa gct gag gag gag tac tcc tcc cta tgt gag ctc ctg
3123
Glu Asp Leu Glu Ala Glu Glu Glu Tyr Ser Ser Leu Cys Glu Leu Leu
        865   870   875

ggc agc ccc gag cag agg cct ggc atg cag gac ccg ctg tca ccc aag
3171
Gly Ser Pro Glu Gln Arg Pro Gly Met Gln Asp Pro Leu Ser Pro Lys
    880   885   890

gcc cca ctc atc tgc acc aag gag gag gtg gag gag gtg ctg gac tcc
3219
Ala Pro Leu Ile Cys Thr Lys Glu Glu Val Glu Glu Val Leu Asp Ser
895   900   905   910

aag gcc ggc tgg ggc tct ccg tgc cac ctc tca ggg gag tcc gtc atc
3267
Lys Ala Gly Trp Gly Ser Pro Cys His Leu Ser Gly Glu Ser Val Ile
                915   920   925

ctg ctg ggc cct aca gtg ggc acc gag tca aag gtc cag agc tgg ttt
3315
Leu Leu Gly Pro Thr Val Gly Thr Glu Ser Lys Val Gln Ser Trp Phe
                930   935   940

gag tcc tct ctg tca cac atg aag cca ggt gaa gag ggg cct gat ggg
3363
Glu Ser Ser Leu Ser His Met Lys Pro Gly Glu Glu Gly Pro Asp Gly

gag cga gct cca ggg gat tcc acc acc tcg gac gcc tct ctg gcc cag
3411
Glu Arg Ala Pro Gly Asp Ser Thr Thr Ser Asp Ala Ser Leu Ala Gln
    960   965   970

aag ccc aac aag cct gct gtg ccc gag gcg ccc atc gca aag aaa gag
3459
Lys Pro Asn Lys Pro Ala Val Pro Glu Ala Pro Ile Ala Lys Lys Glu
975   980   985   990

cct gtg cca cgg ggc aaa agc tta cgg agc cgt cgg gtg cac cgg ggg
3507
Pro Val Pro Arg Gly Lys Ser Leu Arg Ser Arg Arg Val His Arg Gly
                995   1000   1005

ctg ccc gag gcc gag gac tcc cca tgc agg gca cca gtg ctg ccc aaa
3555
Leu Pro Glu Ala Glu Asp Ser Pro Cys Arg Ala Pro Val Leu Pro Lys
            1010   1015   1020

gac ctc ttg ctc cct gaa tcc tgc aca ggg ccc ccc cag gga cag atg
3603
Asp Leu Leu Leu Pro Glu Ser Cys Thr Gly Pro Pro Gln Gly Gln Met
        1025   1030   1035

gaa ggg gct gga gcc cca ggc cgg ggg gcc tcg gaa ggg ctc ccc agg
3651
Glu Gly Ala Gly Ala Pro Gly Arg Gly Ala Ser Glu Gly Leu Pro Arg
    1040   1045   1050

atg tgt act cgt tct ctc acg gcc ctg agt gag ccc cgc acg ccc gga
3699
Met Cys Thr Arg Ser Leu Thr Ala Leu Ser Glu Pro Arg Thr Pro Gly
1055   1060   1065   1070

ccc cca ggc ctg acc acc acc cct gca ccc cca gac aaa ctg ggg ggc
3747
Pro Pro Gly Leu Thr Thr Thr Pro Ala Pro Pro Asp Lys Leu Gly Gly
            1075   1080   1085

aag cag cga gcc gcc ttc aag tcg ggc aag cgg gtg ggg aag ccc tca
3795
Lys Gln Arg Ala Ala Phe Lys Ser Gly Lys Arg Val Gly Lys Pro Ser
            1090   1095   1100

ccc aag gct gcc tcc agc ccc agc aac ccg gcc gcc ctg cct gtg gcc
3843
Pro Lys Ala Ala Ser Ser Pro Ser Asn Pro Ala Ala Leu Pro Val Ala
        1105   1110   1115

tcc gac agc agc ccg atg ggc tcc aag acc aag gag aca gac tca ccc
3891
Ser Asp Ser Ser Pro Met Gly Ser Lys Thr Lys Glu Thr Asp Ser Pro
    1120   1125   1130

agc acg cct ggc aag gac cag cgc tcc atg atc ctt cgg tca cgc acc
3939
Ser Thr Pro Gly Lys Asp Gln Arg Ser Met Ile Leu Arg Ser Arg Thr
1135   1140   1145   1150

aaa acc cag gag atc ttc cac tcc aag cgg cgg agg ccc tct gag ggc
3987
Lys Thr Gln Glu Ile Phe His Ser Lys Arg Arg Arg Pro Ser Glu Gly
                1155   1160   1165

cgg ctc ccc aac tgc cgt gcc acc aag aag ctc ctc gac aac agc cac
4035
Arg Leu Pro Asn Cys Arg Ala Thr Lys Lys Leu Leu Asp Asn Ser His
              1170   1175   1180

ttg ccc gcc aca ttc aag gtc tcc agc agc ccc cag aag gag ggc agg
4083
Leu Pro Ala Thr Phe Lys Val Ser Ser Ser Pro Gln Lys Glu Gly Arg
        1185   1190   1195

gtg agc cag cgg gca agg gtc ccc aaa cct ggt gca ggc agc aag ctc
4131
Val Ser Gln Arg Ala Arg Val Pro Lys Pro Gly Ala Gly Ser Lys Leu
    1200   1205   1210

tct gac cgg ccc ctc cat gcg ctc aaa agg aag tcg gcc ttc atg gcg
4179
Ser Asp Arg Pro Leu His Ala Leu Lys Arg Lys Ser Ala Phe Met Ala
1215   1220   1225   1230

ccg gtc ccc acc aag aag cgg aac ctg gtc ttg cgg cac ggc agc agc
4227
Pro Val Pro Thr Lys Lys Arg Asn Leu Val Leu Arg His Gly Ser Ser
              1235   1240   1245

agc agc agc aac gcc agt gca atg ggg gag atg gga agg agg aga ggc
4275
Ser Ser Ser Asn Ala Ser Ala Met Gly Glu Met Gly Arg Arg Arg Gly
              1250   1255   1260

ctg agg gtt ccc cca ccc tct tca aga gga tgt ctt ctc cca aga aag
4323
Leu Arg Val Pro Pro Pro Ser Ser Arg Gly Cys Leu Leu Pro Arg Lys
        1265   1270   1275

cca agc cca cca agg gca atg gcg agc ctg cca caa agc tcc cac ccc
4371
Pro Ser Pro Pro Arg Ala Met Ala Ser Leu Pro Gln Ser Ser His Pro
    1280   1285   1290

cgg aga ccc cca ttc ctg cct caa gct cgc ctc tcg gca gcc ttc cag
4419
Arg Arg Pro Pro Phe Leu Pro Gln Ala Arg Leu Ser Ala Ala Phe Gln
1295   1300   1305   1310

ggg gcc atg aag acc aag gtg ctg cca ccc cgg aag ggc cgg ggc ctg
4467
Gly Ala Met Lys Thr Lys Val Leu Pro Pro Arg Lys Gly Arg Gly Leu
              1315   1320   1325

aag ctg gaa gcc atc gtg cag aag atc acc tcg ccc agc ctc aag aag
4515
Lys Leu Glu Ala Ile Val Gln Lys Ile Thr Ser Pro Ser Leu Lys Lys
              1330   1335   1340

ttc gca tgt aaa gcg cca ggg gcc tct cct ggt aat cct ctg agc cca
4563
Phe Ala Cys Lys Ala Pro Gly Ala Ser Pro Gly Asn Pro Leu Ser Pro
        1345   1350   1355

tcc ctt tcc gac aaa gac cgt ggg ctc aag ggt gct ggg ggc agc cca
4611
Ser Leu Ser Asp Lys Asp Arg Gly Leu Lys Gly Ala Gly Gly Ser Pro
    1360   1365   1370

```
gtg ggg gtg gaa gaa ggc ctg gta aat gtg ggc acc ggg cag aag ctc
4659
Val Gly Val Glu Glu Gly Leu Val Asn Val Gly Thr Gly Gln Lys Leu
1375            1380            1385            1390


cca act tct ggg gct gat ccg tta tgc aga aat cca acc aac aga tcc
4707
Pro Thr Ser Gly Ala Asp Pro Leu Cys Arg Asn Pro Thr Asn Arg Ser
            1395            1400            1405


tta aaa ggc aaa ctc atg aac agt aag aaa ctg tct tct act gac tgt
4755
Leu Lys Gly Lys Leu Met Asn Ser Lys Lys Leu Ser Ser Thr Asp Cys
            1410            1415            1420


ttc aaa acc gag gcc ttc aca tcc ccg gag gcc ctg cag cct ggg ggg
4803
Phe Lys Thr Glu Ala Phe Thr Ser Pro Glu Ala Leu Gln Pro Gly Gly
        1425            1430            1435


act gcc ctg gcg cct aag aag agg agc cgg aaa ggc cgg gca ggg gcc
4851
Thr Ala Leu Ala Pro Lys Lys Arg Ser Arg Lys Gly Arg Ala Gly Ala
    1440            1445            1450


cat gga ctc tcc aaa ggc ccg ctg gag aag cgg ccc tat ctt ggc ccg
4899
His Gly Leu Ser Lys Gly Pro Leu Glu Lys Arg Pro Tyr Leu Gly Pro
1455            1460            1465            1470


gct ctg ctc ctg act ccc cga gac agg gcc agt ggc aca caa ggg gcc
4947
Ala Leu Leu Leu Thr Pro Arg Asp Arg Ala Ser Gly Thr Gln Gly Ala
            1475            1480            1485


agt gag gac aac tct ggt gga gga ggc aag aag cca aag atg gag gag
4995
Ser Glu Asp Asn Ser Gly Gly Gly Gly Lys Lys Pro Lys Met Glu Glu
            1490            1495            1500


ctg ggc cct gcc tcc cag ccc ccg gag ggc agg ccc tgc cag ccc cag
5043
Leu Gly Pro Ala Ser Gln Pro Pro Glu Gly Arg Pro Cys Gln Pro Gln
        1505            1510            1515


aca agg gca cag aaa cag cca ggc cac acc aac tac agc agc tat tcc
5091
Thr Arg Ala Gln Lys Gln Pro Gly His Thr Asn Tyr Ser Ser Tyr Ser
        1520            1525            1530


aag cgg aag cgc ctc act cgg ggc cgg gcc aag aac acc acc tct tca
5139
Lys Arg Lys Arg Leu Thr Arg Gly Arg Ala Lys Asn Thr Thr Ser Ser
1535            1540            1545            1550


ccc tgt aag ggg cgt gcc aag cga cga cga caa cag cag gtg ctg ccc
5187
Pro Cys Lys Gly Arg Ala Lys Arg Arg Arg Gln Gln Gln Val Leu Pro
            1555            1560            1565


ctg gat ccc gca gag cct gaa atc cgc ctc aag tac att tcc tct tgc
5235
Leu Asp Pro Ala Glu Pro Glu Ile Arg Leu Lys Tyr Ile Ser Ser Cys
            1570            1575            1580


aag cgg ctg agg tca gac agc cgg acc ccc gcc ttc tca ccc ttc gtg
```

5283
Lys Arg Leu Arg Ser Asp Ser Arg Thr Pro Ala Phe Ser Pro Phe Val
        1585   1590   1595

cgg gtg gag aag cga gac gcg ttc acc acc ata tgc act gtt gtc aac
5331
Arg Val Glu Lys Arg Asp Ala Phe Thr Thr Ile Cys Thr Val Val Asn
    1600   1605   1610

tcc cct gga gat gcg ccc aag ccc cac agg aag cct tcc tcc tct gcc
5379
Ser Pro Gly Asp Ala Pro Lys Pro His Arg Lys Pro Ser Ser Ser Ala
1615   1620   1625   1630

tcc tct tcc tca tcc tcg tcc tcg ttc tcc ttg gat gca gcc ggg gcc
5427
Ser Ser Ser Ser Ser Ser Ser Ser Phe Ser Leu Asp Ala Ala Gly Ala
                1635   1640   1645

tcc ctg gcc aca ctc cct gga ggc tcc atc ctg cag ccg cgg ccc tcc
5475
Ser Leu Ala Thr Leu Pro Gly Gly Ser Ile Leu Gln Pro Arg Pro Ser
            1650   1655   1660

ttg ccc ctc tcc tcc acg atg cac ttg ggg cct gtg gtt tcc aag gcc
5523
Leu Pro Leu Ser Ser Thr Met His Leu Gly Pro Val Val Ser Lys Ala
        1665   1670   1675

ctg agt acc tct tgc ctt gtt tgc tgc ctc tgc caa aac ccg gcc aac
5571
Leu Ser Thr Ser Cys Leu Val Cys Cys Leu Cys Gln Asn Pro Ala Asn
    1680   1685   1690

ttc aag gac ctt ggg gac ctc tgt ggg ccc tac tac cct gaa cac tgc
5619
Phe Lys Asp Leu Gly Asp Leu Cys Gly Pro Tyr Tyr Pro Glu His Cys
1695   1700   1705   1710

ctc ccc aaa aag aag cca aaa ctc aag gag aag gtg cgg cca gaa ggc
5667
Leu Pro Lys Lys Lys Pro Lys Leu Lys Glu Lys Val Arg Pro Glu Gly
                1715   1720   1725

acc tgt gag gag gcc tcg ctg ccg ctt gag aga aca ctc aaa ggt ccc
5715
Thr Cys Glu Glu Ala Ser Leu Pro Leu Glu Arg Thr Leu Lys Gly Pro
            1730   1735   1740

gag tgt gca gct gcc gcc act gcc ggg aag ccc ccc agg tga cgg ccc
5763
Glu Cys Ala Ala Ala Ala Thr Ala Gly Lys Pro Pro Arg   Arg Pro
        1745   1750   1755

agc tga ccc ggc caa gca ggg ccc act gcg cac cag tgc ccg ggg cct
5811
Ser   Pro Gly Gln Ala Gly Pro Thr Ala His Gln Cys Pro Gly Pro
    1760   1765   1770

gtc ccg gag gct gca gag ctg cta ctg ctg tga tgg ccg gga gga tgg
5859
Val Pro Glu Ala Ala Glu Leu Leu Leu Leu   Trp Pro Gly Gly Trp
1775   1780   1785   1790

ggg cga gga ggc agc ccc agc cga caa ggg tcg caa aca tga gtg cag
5907

```
Gly Arg Gly Gly Ser Pro Ser Arg Gln Gly Ser Gln Thr     Val Gln
                1795              1800              1805


caa gga ggc tcc ggc aga gcc cgg cgg gga ggc cca gga gca ctg ggt
5955
Gln Gly Gly Ser Gly Arg Ala Arg Arg Gly Gly Pro Gly Ala Leu Gly
            1810              1815              1820


gca tga ggc ctg tgc cgt gtg gac cgg cgg cgt cta cct ggt ggc cgg
6003
Ala     Gly Leu Cys Arg Val Asp Arg Arg Arg Leu Pro Gly Gly Arg
        1825              1830              1835


gaa gct ctt tgg gct gca g
6022
Glu Ala Leu Trp Ala Ala
    1840



<210> 6
<211> 1755
<212> PRT
<213> Homo sapiens

<400> 6
Met Gln Ser Phe Arg Glu Arg Cys Gly Phe His Gly Lys Gln Gln Asn
1               5                   10                  15
Tyr Gln Gln Thr Ser Gln Glu Thr Ser Arg Leu Glu Asn Tyr Arg Gln
            20                  25                  30
Pro Ser Gln Ala Gly Leu Ser Cys Asp Arg Gln Arg Leu Leu Ala Lys
        35                  40                  45
Asp Tyr Tyr Asn Pro Gln Pro Tyr Pro Ser Tyr Glu Gly Gly Ala Gly
    50                  55                  60
Thr Pro Ser Gly Thr Ala Ala Ala Val Ala Ala Asp Lys Tyr His Arg
65                  70                  75                  80
Gly Ser Lys Ala Leu Pro Thr Gln Gln Gly Leu Gln Gly Arg Pro Ala
            85                  90                  95
Phe Pro Gly Tyr Gly Val Gln Asp Ser Ser Pro Tyr Pro Gly Arg Tyr
            100                 105                 110
Ala Gly Glu Glu Ser Leu Gln Ala Trp Gly Ala Pro Gln Pro Pro Pro
        115                 120                 125
Pro Gln Pro Gln Pro Leu Pro Ala Gly Val Ala Lys Tyr Asp Glu Asn
    130                 135                 140
Leu Met Lys Lys Thr Ala Val Pro Pro Ser Arg Gln Tyr Ala Glu Gln
145                 150                 155                 160
Gly Ala Gln Val Pro Phe Arg Thr His Ser Leu His Val Gln Gln Pro
            165                 170                 175
Pro Pro Pro Gln Gln Pro Leu Ala Tyr Pro Lys Leu Gln Arg Gln Lys
            180                 185                 190
Leu Gln Asn Asp Ile Ala Ser Pro Leu Pro Phe Pro Gln Gly Thr His
        195                 200                 205
Phe Pro Gln His Ser Gln Ser Phe Pro Thr Ser Ser Thr Tyr Ser Ser
    210                 215                 220
Ser Val Gln Gly Gly Gly Gln Gly Ala His Ser Tyr Lys Ser Cys Thr
225                 230                 235                 240
Ala Pro Thr Ala Gln Pro His Asp Arg Pro Leu Thr Ala Ser Ser Ser
            245                 250                 255
Leu Ala Pro Gly Gln Arg Val Gln Asn Leu His Ala Tyr Gln Ser Gly
            260                 265                 270
Arg Leu Ser Tyr Asp Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln
        275                 280                 285
Gln Gln Gln Ala Leu Gln Ser Arg His His Ala Gln Glu Thr Leu His
    290                 295                 300
Tyr Gln Asn Leu Ala Lys Tyr Gln His Tyr Gly Gln Gln Gly Gln Gly
305                 310                 315                 320
Tyr Cys Gln Pro Asp Ala Ala Val Arg Thr Pro Glu Gln Tyr Tyr Gln
```

```
                      325                     330                     335
Thr Phe Ser Pro Ser Ser Ser His Ser Pro Ala Arg Ser Val Gly Arg
                340                     345                     350
Ser Pro Ser Tyr Ser Ser Thr Pro Ser Pro Leu Met Pro Asn Leu Glu
                355                     360                     365
Asn Phe Pro Tyr Ser Gln Gln Pro Leu Ser Thr Gly Ala Phe Pro Ala
        370                     375                     380
Gly Ile Thr Asp His Ser His Phe Met Pro Leu Leu Asn Pro Ser Pro
385                     390                     395                     400
Thr Asp Ala Thr Ser Ser Val Asp Thr Gln Ala Gly Asn Cys Lys Pro
                405                     410                     415
Leu Gln Lys Asp Lys Leu Pro Glu Asn Leu Leu Ser Asp Leu Ser Leu
                420                     425                     430
Gln Ser Leu Thr Ala Leu Thr Leu Gln Val Glu Asn Ile Ser Asn Thr
                435                     440                     445
Val Gln Gln Leu Leu Leu Ser Lys Ala Ala Val Pro Gln Lys Lys Gly
        450                     455                     460
Val Lys Asn Leu Val Ser Arg Thr Pro Glu Gln His Lys Ser Gln His
465                     470                     475                     480
Cys Ser Pro Glu Gly Ser Gly Tyr Ser Ala Glu Pro Ala Gly Thr Pro
                485                     490                     495
Leu Ser Glu Pro Pro Ser Ser Thr Pro Gln Ser Thr His Ala Glu Pro
                500                     505                     510
Gln Glu Ala Asp Tyr Leu Ser Gly Ser Glu Asp Pro Leu Glu Arg Ser
                515                     520                     525
Phe Leu Tyr Cys Asn Gln Ala Arg Gly Ser Pro Ala Arg Val Asn Ser
        530                     535                     540
Asn Ser Lys Ala Lys Pro Glu Ser Val Ser Thr Cys Ser Val Thr Ser
545                     550                     555                     560
Pro Asp Asp Met Ser Thr Lys Ser Asp Asp Ser Phe Gln Ser Leu His
                565                     570                     575
Gly Ser Leu Pro Leu Asp Ser Phe Ser Lys Phe Val Ala Gly Glu Arg
        580                     585                     590
Asp Cys Pro Arg Leu Leu Leu Ser Ala Leu Ala Gln Glu Asp Leu Ala
        595                     600                     605
Ser Glu Ile Leu Gly Leu Gln Glu Ala Ile Gly Glu Lys Ala Asp Lys
        610                     615                     620
Ala Trp Ala Glu Ala Pro Ser Leu Val Lys Asp Ser Ser Lys Pro Pro
625                     630                     635                     640
Phe Ser Leu Glu Asn His Ser Ala Cys Leu Asp Ser Val Ala Lys Ser
                645                     650                     655
Ala Trp Pro Arg Pro Gly Glu Pro Glu Ala Leu Pro Asp Ser Leu Gln
                660                     665                     670
Leu Asp Lys Gly Gly Asn Ala Lys Asp Phe Ser Pro Gly Leu Phe Glu
        675                     680                     685
Asp Pro Ser Val Ala Phe Ala Thr Pro Asp Pro Lys Lys Thr Thr Gly
        690                     695                     700
Pro Leu Ser Phe Gly Thr Lys Pro Thr Leu Gly Val Pro Ala Pro Asp
705                     710                     715                     720
Pro Thr Thr Ala Ala Phe Asp Cys Phe Pro Asp Thr Thr Ala Ala Ser
                725                     730                     735
Ser Ala Asp Ser Ala Asn Pro Phe Ala Trp Pro Glu Glu Asn Leu Gly
                740                     745                     750
Asp Ala Cys Pro Arg Trp Gly Leu His Pro Gly Glu Leu Thr Lys Gly
        755                     760                     765
Leu Glu Gln Gly Gly Lys Ala Ser Asp Gly Ile Ser Lys Gly Asp Thr
        770                     775                     780
His Glu Ala Ser Ala Cys Leu Gly Phe Gln Glu Glu Asp Pro Pro Gly
785                     790                     795                     800
Glu Lys Val Ala Ser Leu Pro Gly Asp Phe Lys Gln Glu Glu Val Gly
                805                     810                     815
Gly Val Lys Glu Glu Ala Gly Gly Leu Leu Gln Cys Pro Glu Val Ala
        820                     825                     830
Lys Ala Asp Arg Trp Leu Glu Asp Ser Arg His Cys Cys Ser Thr Ala
        835                     840                     845
Asp Phe Gly Asp Leu Pro Leu Leu Pro Pro Thr Ser Arg Lys Glu Asp
```

```
      850           ·              855                        860
Leu Glu Ala Glu Glu Glu Tyr Ser Ser Leu Cys Glu Leu Leu Gly Ser
865                   870                   875                   880
Pro Glu Gln Arg Pro Gly Met Gln Asp Pro Leu Ser Pro Lys Ala Pro
              885                   890                   895
Leu Ile Cys Thr Lys Glu Glu Val Glu Glu Val Leu Asp Ser Lys Ala
          900                   905                   910
Gly Trp Gly Ser Pro Cys His Leu Ser Gly Glu Ser Val Ile Leu Leu
          915                   920                   925
Gly Pro Thr Val Gly Thr Glu Ser Lys Val Gln Ser Trp Phe Glu Ser
      930                   935                   940
Ser Leu Ser His Met Lys Pro Gly Glu Glu Gly Pro Asp Gly Glu Arg
945                   950                   955                   960
Ala Pro Gly Asp Ser Thr Thr Ser Asp Ala Ser Leu Ala Gln Lys Pro
              965                   970                   975
Asn Lys Pro Ala Val Pro Glu Ala Pro Ile Ala Lys Lys Glu Pro Val
          980                   985                   990
Pro Arg Gly Lys Ser Leu Arg Ser Arg Arg Val His Arg Gly Leu Pro
          995                   1000                  1005
Glu Ala Glu Asp Ser Pro Cys Arg Ala Pro Val Leu Pro Lys Asp Leu
      1010                  1015                  1020
Leu Leu Pro Glu Ser Cys Thr Gly Pro Pro Gln Gly Gln Met Glu Gly
1025                  1030                  1035                  1040
Ala Gly Ala Pro Gly Arg Gly Ala Ser Glu Gly Leu Pro Arg Met Cys
              1045                  1050                  1055
Thr Arg Ser Leu Thr Ala Leu Ser Glu Pro Arg Thr Pro Gly Pro Pro
          1060                  1065                  1070
Gly Leu Thr Thr Thr Pro Ala Pro Pro Asp Lys Leu Gly Gly Lys Gln
          1075                  1080                  1085
Arg Ala Ala Phe Lys Ser Gly Lys Arg Val Gly Lys Pro Ser Pro Lys
          1090                  1095                  1100
Ala Ala Ser Ser Pro Ser Asn Pro Ala Ala Leu Pro Val Ala Ser Asp
1105                  1110                  1115                  1120
Ser Ser Pro Met Gly Ser Lys Thr Lys Glu Thr Asp Ser Pro Ser Thr
              1125                  1130                  1135
Pro Gly Lys Asp Gln Arg Ser Met Ile Leu Arg Ser Arg Thr Lys Thr
          1140                  1145                  1150
Gln Glu Ile Phe His Ser Lys Arg Arg Arg Pro Ser Glu Gly Arg Leu
      1155                  1160                  1165
Pro Asn Cys Arg Ala Thr Lys Lys Leu Leu Asp Asn Ser His Leu Pro
      1170                  1175                  1180
Ala Thr Phe Lys Val Ser Ser Ser Pro Gln Lys Glu Gly Arg Val Ser
1185                  1190                  1195                  1200
Gln Arg Ala Arg Val Pro Lys Pro Gly Ala Gly Ser Lys Leu Ser Asp
              1205                  1210                  1215
Arg Pro Leu His Ala Leu Lys Arg Lys Ser Ala Phe Met Ala Pro Val
              1220                  1225                  1230
Pro Thr Lys Lys Arg Asn Leu Val Leu Arg His Gly Ser Ser Ser Ser
          1235                  1240                  1245
Ser Asn Ala Ser Ala Met Gly Glu Met Gly Arg Arg Arg Gly Leu Arg
      1250                  1255                  1260
Val Pro Pro Pro Ser Ser Arg Gly Cys Leu Leu Pro Arg Lys Pro Ser
1265                  1270                  1275                  1280
Pro Pro Arg Ala Met Ala Ser Leu Pro Gln Ser Ser His Pro Arg Arg
              1285                  1290                  1295
Pro Pro Phe Leu Pro Gln Ala Arg Leu Ser Ala Ala Phe Gln Gly Ala
          1300                  1305                  1310
Met Lys Thr Lys Val Leu Pro Pro Arg Lys Gly Arg Gly Leu Lys Leu
          1315                  1320                  1325
Glu Ala Ile Val Gln Lys Ile Thr Ser Pro Ser Leu Lys Lys Phe Ala
      1330                  1335                  1340
Cys Lys Ala Pro Gly Ala Ser Pro Gly Asn Pro Leu Ser Pro Ser Leu
1345                  1350                  1355                  1360
Ser Asp Lys Asp Arg Gly Leu Lys Gly Ala Gly Gly Ser Pro Val Gly
              1365                  1370                  1375
Val Glu Glu Gly Leu Val Asn Val Gly Thr Gly Gln Lys Leu Pro Thr
```

```
            ·1380                    1385                      1390
Ser Gly Ala Asp Pro Leu Cys Arg Asn Pro Thr Asn Arg Ser Leu Lys
        1395              1400                  1405
Gly Lys Leu Met Asn Ser Lys Lys Leu Ser Ser Thr Asp Cys Phe Lys
    1410                  1415                  1420
Thr Glu Ala Phe Thr Ser Pro Glu Ala Leu Gln Pro Gly Gly Thr Ala
1425                  1430                  1435                  1440
Leu Ala Pro Lys Lys Arg Ser Arg Lys Gly Arg Ala Gly Ala His Gly
            1445                  1450                  1455
Leu Ser Lys Gly Pro Leu Glu Lys Arg Pro Tyr Leu Gly Pro Ala Leu
            1460                  1465                  1470
Leu Leu Thr Pro Arg Asp Arg Ala Ser Gly Thr Gln Gly Ala Ser Glu
        1475                  1480                  1485
Asp Asn Ser Gly Gly Gly Gly Lys Lys Pro Lys Met Glu Glu Leu Gly
    1490                  1495                  1500
Pro Ala Ser Gln Pro Pro Glu Gly Arg Pro Cys Gln Pro Gln Thr Arg
1505                  1510                  1515                  1520
Ala Gln Lys Gln Pro Gly His Thr Asn Tyr Ser Ser Tyr Ser Lys Arg
            1525                  1530                  1535
Lys Arg Leu Thr Arg Gly Arg Ala Lys Asn Thr Thr Ser Ser Pro Cys
        1540                  1545                  1550
Lys Gly Arg Ala Lys Arg Arg Arg Gln Gln Gln Val Leu Pro Leu Asp
        1555                  1560                  1565
Pro Ala Glu Pro Glu Ile Arg Leu Lys Tyr Ile Ser Ser Cys Lys Arg
    1570                  1575                  1580
Leu Arg Ser Asp Ser Arg Thr Pro Ala Phe Ser Pro Phe Val Arg Val
1585                  1590                  1595                  1600
Glu Lys Arg Asp Ala Phe Thr Thr Ile Cys Thr Val Val Asn Ser Pro
            1605                  1610                  1615
Gly Asp Ala Pro Lys Pro His Arg Lys Pro Ser Ser Ser Ala Ser Ser
            1620                  1625                  1630
Ser Ser Ser Ser Ser Ser Phe Ser Leu Asp Ala Ala Gly Ala Ser Leu
        1635                  1640                  1645
Ala Thr Leu Pro Gly Gly Ser Ile Leu Gln Pro Arg Pro Ser Leu Pro
    1650                  1655                  1660
Leu Ser Ser Thr Met His Leu Gly Pro Val Val Ser Lys Ala Leu Ser
1665                  1670                  1675                  1680
Thr Ser Cys Leu Val Cys Cys Leu Cys Gln Asn Pro Ala Asn Phe Lys
            1685                  1690                  1695
Asp Leu Gly Asp Leu Cys Gly Pro Tyr Tyr Pro Glu His Cys Leu Pro
            1700                  1705                  1710
Lys Lys Lys Pro Lys Leu Lys Glu Lys Val Arg Pro Glu Gly Thr Cys
        1715                  1720                  1725
Glu Glu Ala Ser Leu Pro Leu Glu Arg Thr Leu Lys Gly Pro Glu Cys
    1730                  1735                  1740
Ala Ala Ala Ala Thr Ala Gly Lys Pro Pro Arg
1745                  1750                  1755
```

```
<210> 7
<211> 24
<212> PRT
<213> Homo sapiens

<400> 7
```

```
Pro Gly Gln Ala Gly Pro Thr Ala His Gln Cys Pro Gly Pro Val Pro
    1                   5                  10                  15
Glu Ala Ala Glu Leu Leu Leu Leu
                20
```

```
<210> 8
<211> 18
<212> PRT
<213> Homo sapiens
```

<400> 8
Trp Pro Gly Gly Trp Gly Arg Gly Gly Ser Pro Ser Arg Gln Gly Ser
 1   5   10   15
Gln Thr

<210> 9
<211> 19
<212> PRT
<213> Homo sapiens

<400> 9
Val Gln Gln Gly Gly Ser Gly Arg Ala Arg Arg Gly Gly Pro Gly Ala
 1   5   10   15
Leu Gly Ala

<210> 10
<211> 20
<212> PRT
<213> Homo sapiens

<400> 10
Gly Leu Cys Arg Val Asp Arg Arg Arg Leu Pro Gly Gly Arg Glu Ala
 1   5   10   15
Leu Trp Ala Ala
                20

<210> 11
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:
      oligonucleotide

<400> 11
tggccttgct gcccgtagtg ct   22

<210> 12
<211> 30
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic
      sequence = (CAR)2(CAG)n=7-12 CAA wherein n = 7

<220>
<221> variation
<222> (3)
<223> R = A or G

<220>
<221> variation
<222> (6)
<223> R = A or G

<400> 12
carcarcagc agcagcagca gcagcagcaa   30

<210> 13
<211> 33
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic
      sequence = (CAR)2(CAG)n=7-12 CAA wherein n = 8

<220>
<221> variation
<222> (3)
<223> R = A or G

<220>
<221> variation
<222> (6)
<223> R = A or G

<400> 13
carcarcagc agcagcagca gcagcagcag caa   33

<210> 14
<211> 36
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic
      sequence = (CAR)2(CAG)n=7-12 CAA wherein n = 9

<220>
<221> variation
<222> (3)
<223> R = A or G

<220>
<221> variation
<222> (6)
<223> R = A or G

<400> 14
carcarcagc agcagcagca gcagcagcag cagcaa   36

<210> 15
<211> 39
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic
      sequence = (CAR)2(CAG)n=7-12 CAA wherein n = 10

<220>
<221> variation
<222> (3)
<223> R = A or G

<220>
<221> variation
<222> (6)
<223> R = A or G

<400> 15

carcarcagc·agcagcagca gcagcagcag cagcagcaa   39

<210> 16
<211> 42
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic
      sequence = (CAR)2(CAG)n=7-12 CAA wherein n = 11

<220>
<221> variation
<222> (3)
<223> R = A or G

<220>
<221> variation
<222> (6)
<223> R = A or G

<400> 16
carcarcagc agcagcagca gcagcagcag cagcagcagc aa   42

<210> 17
<211> 45
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic
      sequence = (CAR)2(CAG)n=7-12 CAA wherein n = 12

<220>
<221> variation
<222> (3)
<223> R = A or G

<220>
<221> variation
<222> (6)
<223> R = A or G

<400> 17
carcarcagc agcagcagca gcagcagcag cagcagcagc agcaa   45

<210> 18
<211> 39
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic
      sequence = CAGCAA(CAG)n=10 CAA

<400> 18
cagcaacagc agcagcagca gcagcagcag cagcagcaa   39

<210> 19
<211> 30
<212> DNA
<213> Artificial Sequence

```
<220>
<223> Description of Artificial Sequence: synthetic
      sequence = (CAG)n=9-13 CAA wherein n = 9

<400> 19                                                               30
cagcagcagc agcagcagca gcagcagcaa


<210> 20
<211> 33
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic
      sequence = (CAG)n=9-13 CAA wherein n = 10

<400> 20                                                               33
cagcagcagc agcagcagca gcagcagcag caa


<210> 21
<211> 36
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic
      sequence = (CAG)n=9-13 CAA wherein n = 11

<400> 21                                                               36
cagcagcagc agcagcagca gcagcagcag cagcaa


<210> 22
<211> 39
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic
      sequence = (CAG)n=9-13 CAA wherein n = 12

<400> 22                                                               39
cagcagcagc agcagcagca gcagcagcag cagcagcaa


<210> 23
<211> 42
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic
      sequence = (CAG)n=9-13 CAA wherein n = 13

<400> 23                                                               42
cagcagcagc agcagcagca gcagcagcag cagcagcagc aa
```